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GEOPHYSICAL VARIABLES AND BEHAVIOR: XLIV. DAYS OF SUBJECTIVE PRECOGNITIVE EXPERIENCES AND THE DAYS BEFORE THE ACTUAL EVENTS DISPLAY CORRELATED GEOMAGNETIC ACTIVITY

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Summary.—Precognitive experiences concerning consequent events have been hypothesized to be alterations in temporal perception. All such experiences ($n = 156$) that contained the days, months and years for the experience and the event were included from a published data base. Only 40 cases met the methodological criterion of having a temporal discrepancy between the experience and the event of equal to or more than 4 days. For two subsamples (discrepancies of 4-14 days and 15 to 2,000 days), both parametric and nonparametric analyses showed intermediate strength (0.50) correlations between the global geomagnetic activity on the day of the experience and the activity that would occur during the two days before the actual event.

Several analyses (Gearhart & Persinger, 1986) have suggested that geomagnetic factors may be associated with the occurrence of parapsychological (PSI) experiences. One challenging type of PSI experience involves putative perceptions of the future. A number of hypotheses, that include tesseracts and dimensional overlaps (Osborn, 1961). have been proposed. Although these ideas are difficult to operationalize, any realistic physical mechanism of temporal displacement (Stein, 1970) should involve gravitational factors (Lichnerowicz, 1967) that might be reflected in global geomagnetic activity (Persinger & Lafreniere, 1977). One hypothesis that is commensurate with this assumption is that there should be significant positive correlations between the amount of geomagnetic activity on the days of precognitive experiences and this activity on the days of the actual events.

To test this, all of the first hand precognitive cases ($n = 156$) that contained the days, months, and years of the experience and the event were obtained from all of the publications of FATE Magazine (approximately 450 issues). The aa (or average antipodal) index was used as the measure of global geomagnetic activity since it is available for the years 1867 through present. aa values were obtained for the day of the experience and the day of the event and for each of the three days before and three days after the experience and the event.

Because many precognition experiences occurred on the same day as the event and any two successive days of geomagnetic activity are significantly correlated with each other, care was taken to attenuate artifacts. Of the total number of cases, 37% occurred on the same day as the event; a cumulative 63% of the cases involved temporal discrepancies of 1.9 days or less. Consequently, the cases were divided into five groups where the discrepancy in days between the experience and the event was 0 days ($n = 59$), 1 day ($n = 39$ days), 2-3 days ($n = 18$), 4-14 ($n = 18$), and 15 to 2000 days ($n = 22$).

Principal component factor analyses (varimax rotation, SPSSX) of the geomagnetic activity ($\log_{10}$ transformed aa) for the days of the events and the experiences and

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for each of the three days before and for the three days after the events and experiences for the 22 cases where the discrepancy between the experience and the event was at least 15 days indicated the existence of three factors only one of which was major (eigenvalue, 3.82; 38% of variance). It was loaded by the geomagnetic activity on the day of (0.69) and day before (0.75) the experience and for the two days before (0.57; 0.89) the event. Similar results were found for the 18 cases of Group 4 except that in addition geomagnetic activity from the day after the experience also loaded (0.72). Although a total of 14 days could have entered the factor in various orders only four or five variables that reflected the days of or just before the event or the experience shared the same variance.

These results indicated that the strongest correlations occurred between the geomagnetic activity two days before the event and the geomagnetic activity on the day of the experience. The Pearson product-moment and Spearman *rho* coefficients for the five groups were: Group 1 (0.31, 0.36; $p < .01$), Group 2 (0.24, 0.25; $p > .01$), Group 3 (0.81, 0.82; $p < .01$), Group 4 (0.51, 0.53; $p < .01$), and Group 5 (0.52, 0.54; $p < .01$). The high correlations for Group 3 are likely loaded by the grossly inflated artifact of overlap between experience and event days while the coefficients of small magnitude for Groups 1 and 2 reflect the typical intercorrelation between geomagnetic activity after two days. Scattergrams for the correlations for Groups 4 and 5 indicated no evidence of outliers. The r and ρ correlation coefficients for the 40 cases (event-experience differences of more than 4 days) were 0.50 and 0.52 ($p < .001$), respectively. As a control, multiple regression (REGRESSION; stepwise) analysis was completed for the aa values on the day of the experience (dependent variable) and for the aa values for each of the seven days before, after and the day of the event. Only the aa values for the two days before the event entered the equation ($F_{1,38} = 12.46$, $p < .01$). When the reversed operation was performed (aa values for the second day before the event was treated as the dependent variable and the aa values for each of the seven days before, after and the day of the experience were allowed to enter), only the aa values for the day of the experience entered the equation ($F_{1,38} = 11.23$, $p < .01$).

These results support the hypothesis that precognitive experiences tend to occur during periods when the geomagnetic activity is similar to what the geomagnetic activity will be at the time of the event (slope of regression = 0.41). Although this correlation was evident for the 40 cases that met the criterion in this study, they only comprised about 25% of all cases. Most of the precognitive experiences involved time discrepancies of less than two days during which time the concordance between geomagnetic activity is at its peak. The mechanisms for these interesting phenomena that suggest alterations in time perception remain to be established.

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